



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

PROBLEMS FOR SOLUTION.

ALGEBRA.

193. Errata. For $\sum \frac{a_i^2}{h_i^2}$ read $\sum \frac{a_i^2}{h_i}$.

195. Proposed by W. J. GREENSTREET, A. M., Editor of the *Mathematical Gazette*, Stroud, England.

Prove that when n is a positive integer,

$$\sum_{r=1}^{r=n} (-1)^r {}_nC_r 2^{n-r} r^2 = n^2 - 2n.$$

196. Proposed by L. E. NEWCOMB, Los Gatos, California.

Find the r th term of $\left(x - \frac{1}{x}\right)^n \equiv z^n$ in terms of z .

197. Proposed by F. P. MATZ, Sc. D., Ph. D., Professor of Mathematics and Astronomy in Defiance College, Defiance, O.

$$\text{Solve } (18)^{4(2-x)} = (54\sqrt{2})^{3x-2}.$$

GEOMETRY.

221. Proposed by L. E. DICKSON, Ph. D., Assistant Professor of Mathematics, The University of Chicago.

Construct a right triangle with given hypotenuse h , and having an inscribed square of side 12 with a side lying along the hypotenuse. Show further that the minimum value of h is 36, the triangle being then isosceles.

222. Proposed by G. B. M. ZERR, A. M., Ph. D., Parsons, W. Va.

At the ends of a focal chord CC' of a parabola are drawn the normal chords CD , $C'D'$. Prove that DD' is parallel to CC' and equal to three times its length.

223. Proposed by W. J. GREENSTREET, A. M., Editor of The *Mathematical Gazette*, Stroud, England.

Find a point C in a given line AB , so the lines joining C to the angular points of a triangle PQR coplanar with the given line may cut off on any line parallel to the given line and lying in the same plane two equal segments.

CALCULUS.

176. Proposed by B. F. FINKEL, A. M., M. Sc., 204 St. Marks Square, Philadelphia, Pa.

Show by any method, Riemann's excepted, that

$$\int_0^\infty e^{-x^2} \cos \frac{b^2}{x^2} dx = \frac{1}{2} \sqrt{(\pi)} e^{-b^2/2} \cos b \sqrt{2}.$$

177. Proposed by O. W. ANTHONY, Head of Mathematical Department, DeWitt Clinton High School, New York City.

Find the volume of the minimum cone which can be circumscribed about a hemisphere.